CRUSHED INDUCED LIQUEFACTION POTENTIAL OF SANDY SOILS IN KUANTAN

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ABSTRAK

Objektif kajian bagi projek penyelidikan ini adalah untuk mengkaji potensi pencairan pasir mudah hancur Kuantan. Kajian ini menekankan kawasan pantai terutamanya di bahagian pantai timur semenanjung Malaysia. Tanah dari kawasan-kawasan ini memenuhi dua faktor utama yang menyumbang kepada pencairan tanah iaitu tanah jenis longgar dan berpasir yang keadaannya tepu sepenuhnya. Kawasan-kawasan yang ditumpukan ini sinonim dengan pembangunan pesat di mana ia terdedah kepada aktiviti-aktiviti yang mampu menyebabkan kehancuran tanah. Ciri-ciri fizikal tanah dari tiga kawasan pantai yang berbeza ini telah dikaji dari aspek taburan saiz zarah, gravity tentu dan ketumpatan nisbi untuk kedua-dua keadaan iaitu sebelum dan selepas proses penghancuran tanah. Kemudian, hasil taburan saiz zarah dibandingkan pula dengan piawaian pelabuhan bagi mengkaji potensi pencairan di kawasan tersebut. Hasil kajian potensi pencairan bagi tanah di kawasan pantai timur semenanjung Malaysia dilaporkan dalam bentuk lengkung Taburan Saiz Zarah.

ABSTRACT

The objective of this research project is to study the liquefaction potential of crushable Kuantan sand. This research emphasizes mainly on the coastal areas of East Coast Peninsular Malaysia. Soil from these areas fulfils two major factors of liquefiable soil which are uniformly graded loose granular type of soils and in fully saturated soil condition. These areas are also involved to vast development where the soil are frequently exposed to activities that may cause soil crushing. Physical properties of soil from three different coastal areas in Kuantan such as the grain size distribution, specific gravity and relative density were determined before and after crushing the soil. The results of grain size distribution were then used to compare with the Technical Standards of Ports and Harbour to identify its potential of liquefaction. The liquefaction potential of soil in East Coast Malaysia was illustrated in the form of Particle Size Distribution (PSD) curve as the outcome of the research.